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TEXAS INSTRUMENTS INCORPORATED			ARMSTRONG, ANGELA A	
P O BOX 655474, M/S 3999				
DALLAS, TX 75265			ART UNIT	PAPER NUMBER
			2626	
			NOTIFICATION DATE	DELIVERY MODE
			02/04/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

[uspto@ti.com](mailto:uspto@ti.com)

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/668,398	MCCREE, ALAN V.	
	<b>Examiner</b>	<b>Art Unit</b>	
	ANGELA A. ARMSTRONG	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 22 October 2009.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-6 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-6 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

## **DETAILED ACTION**

This Office Action is in response to the amendment filed October 22, 2009, amending claims 1, 2, and 4 and adding new claim 6. Claims 1-6 are pending.

### ***Double Patenting***

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claim 6 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 7,222,070. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to hybrid speech encoding implementing waveform encoding, parametric encoding, frame classification, and zero-phase processing.

***Claim Rejections - 35 USC § 103***

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Serizawa and Kim**

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Serizawa (U.S. Patent 6,101,464 A) in view of Kim

5. Regarding claim 4, the coding system for speech invention of Serizawa reads on the features of the claim as follows:

- Serizawa (column 2 lines 39-44) reads on the feature of *providing waveform excitation sub-frames*
- Serizawa (column 1 lines 26-32) teaches the feature of *providing a plurality of sets of LP coefficients for each sub-frame* (column 11 lines 22-24).
- Serizawa (column 2 lines 38-60) teaches the feature of finding waveform excitations for subframes using sets of LP coefficients (column 8 lines 17-20).
- Serizawa fails to teach a waveform coder coupled to said analyzer.  
Kim et al (from the 5<sup>th</sup>-line from bottom of left column of page 616, to the 3<sup>rd</sup> line of the adjacent right column) reads on the feature of *(b) a waveform coder coupled to said analyzer*, which would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Kim et al to the device/method of Serizawa so as to provide toll-quality speech based on accepted coding methods.

**Thyssen & Kim et al & Chen**

7. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thyssen (U.S. Patent 6,480,822) in view of Kim et al ("On A Modified Cepstral Pitch Control Technique For The High Quality Text-To-Speech Type System", Midwest Symposium on Circuits and Systems, pages 616-619, August 1998) and further in view of Chen (US Patent No. 5,327,520).

8. Regarding claim 1, the low complexity random codebook of Thyssen applies to the features as follows:

- Thyssen (column 6 lines 47-48) reads on the feature of *(a) a linear prediction* (column 9 line 27), *pitch* (column 10 line 1) *and voicing analyzer* (column 12 line 46).
- Thyssen (Abstract, line 9) acknowledges the use of *waveform coding* but expresses reservations without specifying those modifications that would overcome the stated deficiencies.

Kim et al (from the 5<sup>th</sup>-line from bottom of left column of page 616, to the 3<sup>rd</sup> line of the adjacent right column) reads on the feature of *(b) a waveform coder coupled to said analyzer such that the system eliminates switching artifacts*, which would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Kim et al to the device/method of Thyssen so as to provide toll-quality speech based on accepted coding methods.

- Thyssen does not teach, but Chen teaches *LP coefficients updated within a sub-frame for excitation synthesis (col. 20, lines 29-46)*. *It would have been obvious to one of ordinary skill at the time of the invention to modify the system of Thyssen to implement the*

*teachings of Chen, for the purpose of improving the quality of the waveform coding and thereby provide enhanced speech data that is reconstructed at the decoder.*

**Thyssen, Kim et al & Nomura**

9. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thyssen in view of Kim et al and Chen, and further in view of Nomura (Japan Patent 10-207496).

10. Regarding claims 2-3 as understood by the Examiner, the claim is set forth with the same limits as claim 1. Where Thyssen is silent on the matter of specific subframe lengths, Nomura (specifying in [0031] that the subframe length is set by multiplying integer  $i$  to N) which would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Nomura to the device/method of Thyssen so as to provide the closest segment amount used as a basis represented by the parameters.

11. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Serizawa in view of Kim and further in view Nomura (Japan Patent 10-207496).

12. Regarding claim 5 as understood by the Examiner, the claim is set forth with the same limits as claim 4. Where Serizawa and Kim are silent on the matter of specific subframe lengths, Nomura (specifying in [0031] that the subframe length is set by multiplying integer  $i$  to N) which would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Nomura to the device/method of

Serizawa so as to provide the closest segment amount used as a basis represented by the parameters.

13. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gersho et al (U.S. Patent 6,233,550) in view of Honda et al (U.S. Patent 4,850,022).

Regarding claim 6 as understood by the Examiner, the *Hybrid Coding of Gersho et al* reads on the features of the immediate application as follows:

- Gersho et al (with the title) reads on the feature of a *hybrid speech encoder* having a *linear prediction* (14 in figure 4A), *pitch and voicing data* (18, 44 & 46 in figure 4A) but is silent that the combination *includes a zero-phase alignment*. Honda et al (column 1 lines 20-27) reads on the zero phase alignment (column 3 lines 27-33).

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Honda et al to the device/method of Gersho et al so as to process all parameters of speech without the complexities of alternatively associating low bit-rate waveform segments.

- Gersho et al (column 4 lines 5-15) reads on the feature particular to claim 4, of (b) *a parametric encoder coupled to the analyzer* (termed *vocoder*).
- Gersho et al (claim 1 lines 62-63) reads on the features of *a waveform encoder coupled to the analyzer*.

Gersho et al (col. 13, lines 17-22) reads on the features of *said analyzer classifies frames*.

***Response to Arguments***

14. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANGELA A. ARMSTRONG whose telephone number is (571)272-7598. The examiner can normally be reached on Monday-Thursday 11:30-8:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on 571-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Angela A Armstrong/  
Primary Examiner, Art Unit 2626